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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RAO, MANJUNATH N	
ART UNIT	PAPER NUMBER
1652	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/626,583	SIBBESEN ET AL.	
	Examiner	Art Unit	
	Manjunath N. Rao, Ph.D.	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,12,13 and 44-55* is/are pending in the application.

4a) Of the above claim(s) *10, 13, 44-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12 and 48-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 10, 12, 13, 44-55 are currently pending and are present for examination. Claims 12, 48-55 are now under consideration. Claims 10, 13, 44-47 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicants' amendments and arguments filed on 10-18-06 , have been fully considered and are deemed to be persuasive to overcome the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Paice et al. (Accession No. P18429, UnitProt Database, 1990 and Arch. Microbiol., 1986, Vol. 144:201-206 cited in the IDS) or Wolf et al. (Accession No. I40569, PIR Database, 1996 and Microbiology, 1995, Vol. 414:281-290, cited in the IDS). This rejection is based upon the public availability of printed publications. Claim 12 of the instant application is drawn to a bakery product or a substance for making the same comprising the amino acid sequence SEQ ID NO:5, which is a xylanase enzyme. The reference of Paice et al. or Wolf et al. disclose a substance, i.e., a buffer which could be used in the making of a bakery product comprising the amino acid sequence SEQ ID NO:5 having xylanase activity. See enclosed sequence alignments and Figure 2 in Paice et al.

Thus Paice et al. or Wolf et al. anticipate claim 12 of this application as written.

In response to the previous Office action, applicants have traversed the above rejection. Applicants argue that an anticipation rejection under 35 U.S.C. § 102(b) requires a showing that each limitation of a claim is found in a single reference, practice, or device. Applicants submit that the claimed invention is a bakery product or substance for making a bakery product comprising an amino acid sequence comprising SEQ ID NO:5 and that a bakery product is a foodstuff that is baked and the references cited by the Examiner do not teach adding the polypeptide of SEQ ID NO:5 to any foodstuff, much less a bakery product or substance for making a bakery product. Applicants argue that Paice teaches the use of xylanases for removing hemicelluloses from wood pulp, an industrial, not edible, application. On similar limes , applicants argue, Wolf fails to teach that a polypeptide of SEQ ID NO:5 might be included in a bakery product or substance for making a bakery product, or that this amino acid sequence might be safe or suitable for consumption. Examiner respectfully disagrees with such arguments as being persuasive to overcome this invention. It can be clearly seen that the claim is drawn to a bakery product or "a substance for making a bakery product". Both the references teach the enzyme composition in a substance for making a bakery product. Applicants argument that the references do not teach any foodstuff or that the enzyme can be used for consumption is highly misplaced. As per the claim limitation, the references teach a substance for making a bakery product comprising the enzyme.

Furthermore, examiner has given little weight for the preamble as a claim limitation. In the instant case the preamble adds little in way of claim limitation and therefore Examiner has not given any patentable weight to the preamble of the claim. Considered broadly, the claim is

simply drawn to a composition comprising the xylanase enzyme having the amino acid sequence of SEQ ID NO:5 and so does the references. Therefore, Examiner continues to maintain the above rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 48-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paice et al. or Wolf et al. and Poutanen (Trends in Food Science and Technol., 1997, Vol. 8(300-306). Claims 48-55 are drawn to a dough for making a bakery product prepared by incorporating comprising the polypeptide with an amino acid sequence comprising SEQ ID NO:5 whereby the resultant dough is less sticky compared to a dough not comprising the enzyme and a bakery product prepared from using said dough.

Paice et al. and Wolf et al. teach a xylanase that is 100% identical to amino acid sequence SEQ ID NO:5. However, said reference do not disclose a dough comprising said enzyme or a bakery product prepared from such a dough.

Poutanen teaches endogenous and added enzymes have an important effect on the quality of the cereal foods. The reference teaches that added enzymes induce changes in dough rheology, which results in increased bread volume. The reference teaches that degradation of pentosans, which bind nearly ten times their own weight of water, has a significant effect on the

functional properties of the dough. The reference teaches that the use of xylanase in the dough causes water redistribution from pentosans to gluten phase, facilitating extensibility and resulting in better ovenspring. The reference lists in figure 3 the several advantages of using xylanase in bread making that has been recognized in the art.

In addition to the above reference of Poutanen, there are several other references in the art, which highlight the benefits of the use of xylanase in the baking industry such as providing different textures, uniform bread quality characteristics and microstructure to bakery products.

Combining the teachings from the above references, it would have been obvious to one of ordinary skill in the art interested in making bread with uniform bread qualities, making bakery products with different textures and microstructure to use the xylanase enzyme taught by Wolf et al. or Paice et al. in a dough used for making a baked product. One of ordinary skill in the art would have been motivated to do so because the reference of Poutanen as well as several other references in the art teach that adding xylanases to baking dough leads to improved qualities of the baked products. One of ordinary skill in the art would have had a reasonable expectation of success since Paice et al. and Wolf et al. provide a purified and recombinant enzyme ready for use and the reference of Poutanen and others extol the use of xylanase in baking.

Therefore, the above references render claims 48-55 *prima facie* obvious to one of ordinary skill in the art.

In response to the previous office action , applicants have traversed the above rejection. Applicants argue claim 48 is now directed to a dough for making a bakery product comprising a bacterial xylanase with the sequence of SEQ ID NO:5 and said dough is less sticky than a

dough comprising a fungal xylanase. Applicants argue that Paice and Wolf do not teach the incorporation of the present enzyme in a foodstuff or dough, and Gottschalk does not remedy that deficiency. Examiner respectfully disagrees. However, Examiner has redrafted the above rejection after withdrawing the reference of Gottschalk et al. While Paice and Wolf do not teach the use of the enzyme in the baking industry, the art as a whole including Gottschalk teach the use of the same.

Applicants also make a contradictory argument that Gottschalk discloses the use of a different bacterial xylanase with a different amino acid sequence, specifically with substitutions at amino acid residues 7, 13, 16, 21, 30, 43, 150, 171,197 and 203 in SEQ ID NO:5 (called as Rohm enzyme) and not SEQ ID NO:5. Thus, applicants argue that Gottschalk actually teaches away from using the Paice enzyme in a baked good by distinguishing the Rohm enzyme's sequence from the Paice enzyme sequence and claiming the desirability of the Rohm enzyme properties arising from the sequence differences. If that is the case, then one of skilled in the art would have to question whether the instant claims are enabled since applicants have done nothing to the sequence of Paice or Wolf et al. Furthermore, Examiner has now withdrawn the reference of Gottschalk et al. and used the reference of Poutanen which teaches other advantages of using xylanase in bakery doughs. While one of ordinary skill in the art may not be motivated to use the enzyme of Paice or Wolf to reduce the stickiness of the dough, nothing prevents them from using the same enzyme to enhance other qualities of the baked products such as texture, stability and microstructure. Therefore, contrary to applicant's argument, a person of skill in the art would have several other reasons or motivation to use the industrial enzyme of Paice in making baked products.

Next, applicants dangerously argue that even if the teachings were combined, there would be no expectation of successfully arriving at the claimed invention because Gottschalk points out the sequence differences between the Rohm enzyme and the Paice enzyme as leading to less desirable properties in the Paice enzyme. Examiner respectfully disagrees with such an argument because the enzyme of Paice et al. has several other desirable properties that has been recognized by others in the art. As argued by the Examiner above, if applicants' arguments were to be true one would have to question the enablement of the claims using the unaltered enzyme of Paice for making the bakery dough. For all the above reasons the above rejection is maintained.

Conclusion

None of the claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Manjunath N. Rao, Ph.D. whose telephone number is 571-272-0939. The Examiner can normally be reached on 7.00 a.m. to 3.30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Ponnathapura Achutamurthy can be reached on 571-272-0928. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300 for regular communications and for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Manjunath N. Rao, Ph.D.
Primary Examiner
Art Unit 1652

January 5, 2007